

substrate, using an apparatus comprising:

a cassette for receiving plural substrates, at a position of which an upper region is open to a cassette transferring path;

an atmospheric transferring device for transferring, one by one, said substrates;

a vacuum transferring chamber having a vacuum transferring means;

plural vacuum processing chambers for processing, one by one, said substrates;

a device having a first lock chamber in which said substrates are carried in and carried out, one by one, between said atmospheric transferring device and said vacuum transferring chamber and a second lock chamber in which said substrates are carried in and carried out, one by one, between said atmospheric transferring device and said vacuum transferring chamber; and

opening and closing devices for opening and closing one of the first and second lock chambers each time a substrate is carried into said one of the first and second lock chambers, one by one, and each time a substrate is carried out of said one of the first and second lock chambers, one by one,

wherein the method comprises the steps of:

taking out, one by one, said substrates from said cassette by said atmospheric transferring device;

carrying in a substrate taken out from the cassette, to one of said first and second lock chambers in air;

closing off said one of said first and second lock chambers, from said atmospheric transferring device, by using the opening and closing devices;

evacuating said one of said first and second lock chambers;

transferring said substrate to any one of said plural vacuum processing chambers from said one of said first and second lock chambers in a vacuum, through said vacuum transferring chamber;

processing said substrate in said one of said plural vacuum processing chambers;

transferring said substrate, which has been subjected to processing, to one of said first and second lock chambers in the vacuum through said vacuum transferring chamber;

closing said one of said first and second lock chambers, to which the substrate is transferred after the processing, from said vacuum transferring chamber, by using the opening and closing devices, and, after that, opening the one of the first and second lock chambers, having the substrate therein, to air, by using the opening and closing devices; and

taking out said substrate in said one of said first and second lock chambers, to which the substrate is transferred after the processing, by said atmospheric transferring device and receiving said substrate in said cassette.

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Please add the following new claim to the application:

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--9. Method of using a conveyor system for processing substrates in plural vacuum processing chamber installation portions, the conveyor system including:

an atmospheric loader;

a vacuum loader; and

two lock chambers, which are separately disposed, each having an atmospheric loader side and a vacuum loader side, and having a gate valve for said atmospheric loader side and another gate valve for said vacuum loader side,

wherein said vacuum loader has

(1) a transfer chamber connected to the two lock chambers via the another valve gate,

(2) conveyor structure, and

(3) plural vacuum processing chamber installation portions,

the method comprising the steps of:

transferring substrates to be processed, one by one, separately from said atmospheric loader to a lock chamber of the two lock chambers, in a state of keeping only one substrate in each of said two lock chambers;

providing a vacuum in each of said two lock chambers;

after providing a vacuum in each of said two lock chambers, transferring the substrates, one by one, from the lock chambers to at least one of said plural vacuum processing chamber installation portions, via said transfer chamber;

processing the substrates in said at least one of  
said plural vacuum processing chamber installation portions;

after said processing, transferring the processed  
substrates, one by one, from said at least one of said plural  
vacuum processing chamber installation portions to the lock  
chambers, via said transfer chamber; and

keeping the processed substrates in the lock  
chambers, and transferring the processed substrates from the  
lock chambers to said atmospheric loader.--

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